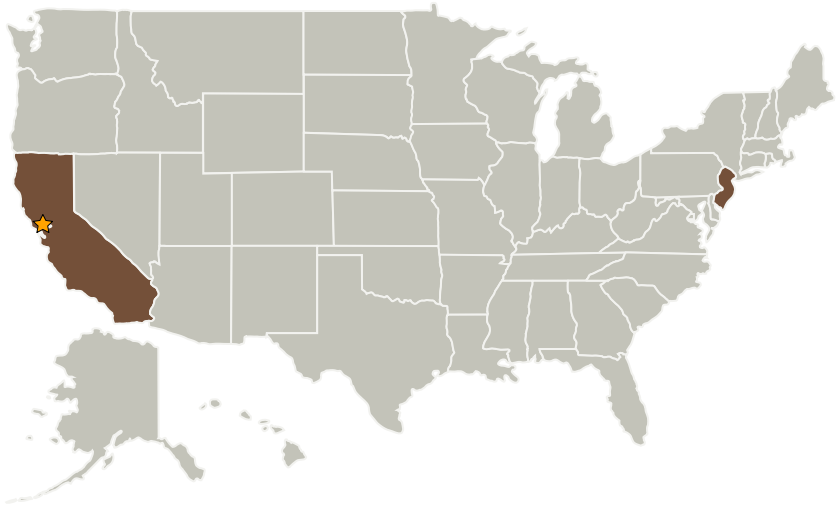
Surface-Mount Rotor Motion Sensing System, Phase I

Completed Technology Project (2007 - 2007)

Project Introduction

A surface-mounted instrumentation system for measuring rotor blade motions on rotorcraft, for use both in flight and in wind tunnel testing, is proposed for development. The technology builds upon previous Navy-sponsored SBIR work in the design of a system for measuring rotor blade motion and loads, by combining several separate measurement technologies into a single instrumentation unit. The device may be applied onto the underside of any rotor system, and has a sufficiently small weight and form factor to minimize any impact on either blade aerodynamic or inertial properties. Data transfer to and from the unit is performed using optical telemetry, and power for the system is provided from self-contained conformal batteries. These features eliminate the need for specialized rotor hub hardware for blade angle measurement or sliprings for power or data exchange, thus enabling its use on a wide range of rotor systems of interest to NASA and commercial customers.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Continuum Dynamics, Inc.	Supporting Organization	Industry	Ewing, New Jersey

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations	
California	New Jersey

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX14 Thermal Management Systems
  - TX14.2 Thermal Control Components and Systems
    - TX14.2.8 Measurement and Control